

sufficient information to direct the synthesis of primers for use in PCR or for the hybridization protocols to recover DNA fragments corresponding to these proteins. For example, the corn cDNA encoding seed microsomal delta-12 fatty acid desaturase was isolated using PCR to obtain a fragment that was later useful as a probe for the full-length clone. This is discussed in the specification on page 38, line 4 through line 13 on page 39 and on page 75, line 25 through line 18 on page 77.

Furthermore, submitted herewith is a copy of the Declaration of Dr. Anthony Kinney which shows unequivocally the close evolutionary/structural relationship of delta-desaturase and "desaturase-related" proteins. In addition, Dr. Kinney's declaration discusses the article of Broun et al., in "Physiology, Biochemistry and Molecular Biology of Plant Lipids," Williams, J. P. et al., eds., Kluwer Academic Publishers, Dordrecht, 1997, pages 342 - 344 (copy attached to the copy of Dr. Kinney's Declaration) which further supports the relationship between a delta-12 desaturase and desaturase-related enzymes such as a hydroxylase. Figure 1 in Broun et al. illustrates this point. The wild-type form of *L. fendleri* "hydroxylase" is shown to produce both polyunsaturated and hydroxylated structures (presumably from oleate). Thus, it is not possible to say that delta-12 desaturases and 12-hydroxylases constitute distinct classes of proteins, because a single protein shares the properties that would be used to distinguish them. Site-directed mutagenesis was then used to introduce only six amino acid substitutions into the wild-type protein. In yeast strains expressing the mutated hydroxylase gene, ratios of 18:2 to ricinoleic acid levels were more than 30-fold higher than in control strains expressing the wild-type gene.

Applicants respectfully submit that, in light of the declaration of Dr. Kinney, the claims need not be limited to one specific nucleotide sequence. Dr. Kinney's declaration shows that delta-12 desaturases and 12-hydroxylase which is a desaturase-related enzyme are highly similar and other such sequences would be isolated using these sequences as hybridization probes.

Parenthetically, it should be noted that the original Declaration can be found in the file of Applicants' Assignee's Application No. 08/256,047 filed on October 7, 1994 the subject matter of which is related to the present case.

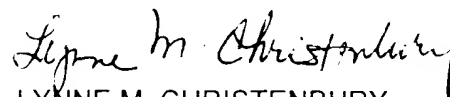
Five different delta-12 fatty acid desaturase genes were isolated from divergent plant species representing both monocots and dicots. Applicants used a single desaturase gene (from *Arabidopsis*) as a probe to isolate a number of delta-12 desaturase genes from other plants.

In view of the foregoing discussion, it is respectfully submitted that these sequences are so inextricably intertwined as to constitute a single inventive concept. Thus, reconsideration of the restriction requirement is respectfully requested.

A petition for a one (1) one month extension of time accompanies this response.

Please charge any fees that are associated with the filing of this response including, but not limited to, the extension of time to Deposit Account No. 04-1928.

Respectfully submitted,



LYNNE M. CHRISTENBURY
ATTORNEY FOR APPLICANTS
REGISTRATION NO. 30,971
TELEPHONE: 302-992-5481
FACSIMILE: 302-892-1026

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Enclosures